

# The Cary Arboretum



of The New York Botanical Garden

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## Milford's Trees Will Flourish . . . with a Little Help from Their Friends

by Robin Parow-Place

It was not unusual over the past two years to see a small group of young adults studying, measuring, mapping and probing individual trees in the quaint village of Milford, Pennsylvania. As if the trees themselves were patients lined up for a physical examination, each one offered individual statistics contributing to a street tree survey that will be issued this spring to the community of Milford, a village located in the northern Pocono Mountains.

The young "interns" conducting the examinations were newly trained participants in the Y.A.C.C. (Young Adult Conservation Corps). Trained by Arboretum Dendrologist Dr. Thomas S. Elias, the youths collected data on 1,086 street trees. An additional evaluation was conducted in Milford's parks.

The project was sponsored by the Pinchot Institute for Conservation Studies, which is part of the U.S. Department of Agriculture Forest Service. The goals of the project to be carried out by Dr. Elias included providing a complete systematic analysis and management plan for the publicly owned trees of Milford, as well as providing meaningful professional skills and employment for young people between the ages of 18 and 21. This was the first street tree survey Dr. Elias has supervised in which young adults were trained and immediately put to work having had no previous knowledge of urban trees.

Another goal, to promote urban forestry concepts, has been one of Dr. Elias' main interests over the past ten years. In Washington, D.C., in 1976, Dr. Elias worked on an urban forestry act that in future years would stimulate the urban forestry movement in the United States. In 1980, a directory of over 1,300 practicing urban foresters in the United States was completed as a joint project with Research Assistant Lydia Newcombe. Dr. Elias is also known locally for his urban tree projects in Peekskill, Poughkeepsie and Millbrook.



Y.A.C.C. students record tree data on a survey sheet in Milford.

## Maple Sugaring Weekend March 21 and 22

Once again Arboretum sugar maples (*Acer saccharum*) don the bright sap buckets which annually signify that maple sugaring weekend is upon us.

Scheduled for the third weekend in March, this year's maple sugaring weekend will offer demonstrations of the tapping, boiling and candymaking processes known in the Northeast for many centuries.

Ms. Barrie Kavasch, author of *Native Harvests: Recipes and Botanicals of the American Indians*, will present a program on the processes and ceremonies of maple sugaring used by native Americans. Ms. Kavasch, who is an ethnobotanist, naturalist, artist and writer, is currently working at the Smithsonian Institute on a display depicting the ethnobotany of the American Indian.

Programs will be held from 11 a.m. to 4 p.m. both Saturday and Sunday, March 21 and 22, on the lawn of the Arboretum's Gifford House Education and Visitor Center, Sharon Turnpike (Route 44A), Millbrook. For non-members, there is a fee of \$2.00 for adults and \$1.00 for children under 18 years.

Other educational programs scheduled at the Gifford House in coming weeks include a course on rock gardening beginning March 24; basic classical bonsai, March 28; woodlot management for the homeowner, also March 28; woodcarving, a six-week course beginning April 2; bird identification and habits, a four-week course beginning April 2; a course on solar hot water heating on April 10; a six-week course entitled "Sketching In and Outdoors," beginning April 21; and an outdoor watercolor class which begins April 23.

Two courses, which will be offered in Donnelly Hall at Marist College, include "Flowering Houseplants," March 28, and "Diseases of Plants," April 25.

For more information, or to register for any of the above mentioned classes, please call the Gifford House at (914) 677-5358. No advance registration is necessary for Maple Sugaring Weekend. Just come and have a good time while you learn how to tap your own trees.

All three goals worked together beginning with an orientation session on street trees held one summer afternoon in 1979 at Gray Towers, Gifford Pinchot's estate which is now the headquarters for the Pinchot Institute of Conservation Studies. Attended by twenty Y.A.C.C. participants, as well as by local community members and representatives, utility companies, government, the media, garden clubs, and a historical society, Dr. Elias began the first of many discussions on urban forests and the development of a master plan for Milford. The village itself has been known for its attractive archways of shade trees lining the streets. Its first major tree plantings date from ten years before the Civil War. As a result of these early plantings, Milford has a disproportionate number of old trees which creates a much higher death rate than for a mixture of young and old trees. Local citizens and members of several community organizations showed great concern for the future of their village at this meeting, and news quickly began to spread

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## Milford's Trees

### Will Flourish

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that Milford was to be "under a botanist's microscope" for a five-month period.

Twelve Y.A.C.C. participants were selected from twenty applicants on the basis of their enthusiasm and interest in the program, and sessions soon began to transform these young people into well-trained surveyors. During an intensive three-day training period, Dr. Elias taught the group to identify and measure trees, to take soil samples and to identify tree problems such as trunk and insect damage. The group then divided into teams and the village into seven parcels. Thus began the survey to map and gather statistics on all of the trees on public property. Staff members of the Pinchot Institute served as field supervisors of the teams. Mr. Allan Knox, Director of the Human and Natural Resources Program, and Mr. Tom Ellis, Assistant Director of the Institute, were instrumental in the organization and success of this project.

That Milford's trees are predominantly maples is a link to past history and to potential problems. The percentage of maples in Milford, with 92.7%, is higher than that of many northeastern communities. The maple species include 79.2% *Acer saccharum* (sugar maple), and a combination of *Acer rubrum* (red maple), *Acer platanoides* (Norway maple), and *Acer saccharinum* (silver maple) contributing another 13.5%. This trend towards monoculturing — the cultivation or dependence upon a single plant species — is not a desirable characteristic in that it increases the chances of altering the landscape dramatically should a major disease or insect pest become established.

Most of the existing maples (75%) showed slight, moderate or severe injury problems. Because of the age and types of these trees, the survey indicated that 5% of the older, more severely damaged sugar maples are dying, with a death rate two to three times the normal rate for street trees in other communities.

Communities with a good, heterogenous mixture of tree types lining the streets can minimize the effects of disease or pests attacking a particular kind of tree. One well-

known victim of such a development is the American elm, a tree which once thrived in New England and midwestern states. The accidental introductions of Dutch elm disease and phloem necrosis disease quickly spread to epidemic proportions resulting in a great expense to cities for the removal of hundreds of dead trees and a dramatic change in city conditions. The problem not only left streets treeless, but also left communities with the necessity for financing major new tree planting efforts. In evaluating the survey, Dr. Elias stated that sugar maples, even in their natural settings, begin to decline between the ages of 75 and 125 years of age and seldom survive more than 150 years. This life span is shortened considerably when the trees are subjected to the various stresses of streetside settings in the modern automotive era.

With a goal to achieve a ratio of 2:1:1 of mature to intermediate-aged and young trees, Dr. Elias will recommend that Milford establish a ten-year program during which period the percentage of mature trees will be reduced from about 75% to 50% through the replacement of older trees. Part of the program will include the removal of trees which are already dead, dying or severely injured. Others will die as the work progresses over the decade. Concomitant with this, Dr. Elias will recommend that young trees be planted each spring or autumn.

A major concern of the townspeople of Milford was to maintain the beautiful autumn foliage colors offered by the maples, both for aesthetics and as a tourist attraction. The town itself is a community of about 1,200 permanent residents, but it attracts more than 250,000 visitors to the area annually. New plantings including *Cornus kousa* (Japanese dogwood), *Prunus sargentii* (Sargent cherry), and black gum or tupelo (*Nyssa sylvatica*) will be planted for their ability to thrive as street trees and for their colorful autumn foliage.

The survey showed that mechanical damage from trucks, automobiles and lawn mowers accounted for the majority of injuries to street tree trunks. Removal of a section of bark can be so detrimental that a tree may slowly die because the roots are cut off from their leafy food sources. This, in addition to damage caused by broken or improperly pruned branches, frost cracks and extensive rot, demands a good maintenance program.

Especially important are pruning, cabling, and fertilization to extend the life of those trees which are slightly to moderately injured.

Maintenance is one of the most important facets of any urban tree program, and the village of Milford will be required to devote time, effort and budgeted monies for the tree program. The most urgent maintenance requirement is removal of dead and dying trees that pose a safety hazard to people and property if left unattended. Also needed is an immediate pruning program. Some dead or dying branches serve as a continuing source of infection and can attract fungi responsible for decay. Other problems such as nutrient-deficient soils can be corrected by increasing soil fertility and by pH adjustments.

The report to be presented to the concerned citizens of Milford is as important as the future of the village itself. "Recognizing that urban trees serve as a link between people and their environment," says Dr. Elias, "members of the Pinchot Institute were concerned for the future urban landscape of this community. The community of Milford has been fortunate to be the target of such a generous, helpful and important survey funded by the U.S. Forest Service."

## Appeal Receives Good Response

The third annual appeal has resulted in a very good response from friends and neighbors throughout the mid-Hudson region and beyond.

In her letter of appeal, Mrs. Maris Van Alen, Chairman for annual giving, quoted the Arboretum as fast becoming a true national and international center for ecological research and education. "Of the many kinds of support upon which it depends, none is more important than contributions received from friends," she said.

More than one-third of the general support money the Cary Arboretum needs must come from unassured sources. Gifts can, however, be earmarked for horticultural, educational, or scientific projects.

## Dr. Karnosky Receives Grant for Elm Projects

Arboretum Forest Geneticist Dr. David Karnosky has recently been granted \$20,000 by the Arthur Ross Foundation to pursue elm research.

This grant will provide continued support for Dr. Karnosky's attempts to hybridize the ornamental desirable American elm with the disease-resistant Chinese elm. To date, funding from the Arthur Ross Foundation to the Cary Arboretum has resulted in the only existing efforts to bring disease resistance to the American elm by means of sexual hybridization with the Chinese elm. "Thousands of crosses have been made," reports Dr. Karnosky, "and the next phase of this study, that is testing of the hybrid seedlings obtained to verify hybrids and to check on their disease resistance and form, will tell whether there is hope for the approach we've pursued to date." The 400 suspected hybrid seedlings obtained in the

initial project will be grown at the Arboretum's greenhouse and will be tested for resistance to Dutch elm disease and phloem necrosis, two diseases which are lethal to American elms.

The recent grant also will allow Dr. Karnosky to complete a program of propagating Chinese elm trees for eventual planting in New York City's parks. Currently, about 100 plants are ready to be planted into the Arboretum's nursery in cooperation with Mr. Robert Hebb, Arboretum Horticulturist. Approximately 200 additional trees will be planted in the New York City Park Department's nursery.

The Arthur Ross Foundation, incorporated in 1955, serves broad purposes, primarily local giving, with emphasis on higher education and cultural institutions.



Dr. David Karnosky and Mr. Arthur Ross examine branches of the large Chinese elm in Central Park which is being used in this study.

Photo: Robert Nickler

# Students at the Arboretum

College students bring a refreshing atmosphere to the Cary Arboretum, and this year is no exception.

Amy Kardas, from Dutchess Community College, is evaluating orchard soils for a project on vole populations. She is also assessing winter deer damage on the Arboretum grounds.

Greg Renkes of Vassar College is principally a lab assistant for the Arboretum's Wildlife Department. His responsibilities include sectioning and aging deer teeth, assessing soil data, and evaluating the condition of squirrels collected in the Garden's Hemlock Forest in the Bronx.

Donna Stockrahm, back at Ohio State University after several months at the Arboretum, is carrying out a computer analysis of vole and orchard habitat data collected in 1980.

Bill Hyatt, from the University of Connecticut, is completing his study of the east Wappingers Creek stream ecosystem. Bill's program, leading to a Master's thesis,

involved evaluation of brown trout population dynamics in the stream.

Ken Skov from Connecticut College is studying the effects weasels have on vole populations.

Dan Becker is a Vassar College student studying the cost effectiveness of deer fences and repellents. He is also compiling information for a report on the Arboretum's five-year deer management program.

Peter Cordavano from Manhattan College is working with Rock Vitale, a Marist College student, in attempts to cross the American elm with the Dutch elm disease-resistant Siberian elm.

Sarah Sowinski, a Marist College student, is attempting to regenerate shoots of the American elm from cells and cell masses in tissue culture systems.

Jeff Hill, from S.U.N.Y. Binghamton, is doing an ecological study of a pine vole population on the 5,000-acre Catskill tract of the Mohonk Trust Corp., in Ulster County.



*Since the summer of 1978, Dawn Lange worked first towards a Master's Degree and now towards a Ph.D. in Tree Improvement/Forest Genetics. Her internship at the Arboretum involves working with cells in a protoplast fusion process to hybridize the American with the disease-resistant Siberian elm. Dawn is a student at the College of Environmental Science and Forestry, SUNY at Syracuse.*

Gwen Feldman from Marlboro College in Vermont is studying the biology of the sweet fern.

Suzanne Quinn of Marist College is studying plant anatomy and the glandular hairs of sweet fern.

Mary Alice Hard of Marist College is studying the distribution of coniferous trees in the Soviet Union.

Tina Mendeloff, a University of Connecticut student, is studying New England cottontail rabbit populations in central Connecticut.

Timothy Hess, a Marist College student, is studying chemical variation in the defensive secretions of the lubber grasshopper.

Peter Vaccaro, a Marist College student, is working to isolate human hair compounds as possible deer repellents.

Ralph Pagano and Randy Fitzgerald are continuing their radio tracking studies on meadow and pine voles in the orchards of Ulster County. Both are from S.U.N.Y. Binghamton.

The projects carried out by college students working at the Arboretum are major factors in virtually all programs. The students allow the Arboretum to follow up research possibilities that could not otherwise be explored, and their bright minds suggest new research options and interpretations. Most importantly, the staff and resources of the Cary Arboretum are being used to create succeeding generations of scientists and scholars in the most profoundly significant ways that have ever been discovered, hands-on and one-on-one.

Internships, grant-supported employment and volunteer positions are frequently available at the Cary Arboretum. For more information please contact Dr. Peter Dykeman, Coordinator of Education, at (914) 677-5358.

## People at the Arboretum



Joe Blank, Senior Gardener . . . Joe's background is as diversified as his responsibilities at the Arboretum. Originally from the Bronx, his first exposure to horticulture was at the New York Botanical Garden at age 15, when he spent the summer employed as a "Junior Weeder." He recalls that although his tedious chores lacked great gratification, he was fortunate to become acquainted with Louie Politi, Horticulturist, who inspired Joe to pursue horticulture later in life.

In 1967 while in the process of completing credits for a B.A. degree in English at Lehman College, Joe also was enrolled in the New York Botanical Garden School of Horticulture. Soon after graduating from the program in 1969, he was hired to help develop the Walter Davis Arboretum in Elizabeth City, North Carolina. After one year on the job, Joe received a call from Dennis Brown, then Director of Horticulture at the New York Botanical Garden, regarding the just-named Cary Arboretum.

Joe's first visit to Millbrook and the Arboretum left him deeply impressed with the potential of the then 1,500-acre tract of land. He began work in September, 1971, renovating the Conover House, which would later be used for labs and offices. Construction of the greenhouse complex and internal road system and renovation of the Lovelace House soon followed. Responsible for this physical aspect of building the Arboretum were "The Magnificent Seven," the seven original employees — including Joe — who worked daily on this challenging prospect. "The Magnificent Seven" were a close-knit group who frequently could be found at get-togethers after hours or on weekends. Combined with a few employees from the neighboring Farm and Home Center, the "Conservation Team" was formed as part of the Dutchess County Groundhog Baseball League. Home field for the team was at the Greenhaven Correctional Facility.

Joe's hobbies include studying wildflowers, fishing, hunting and playing tennis — all of which he does at the Arboretum, except for the latter.

During working hours, his main responsibility is helping to establish a surveyed grid system for the Arboretum. When completed, the one-hectare system will allow employees to pinpoint the locations of plantings, observations, or items anywhere on the grounds.

As a shop steward for Union D.C. 37, Local 374, Joe works closely with both administrators and the blue-collar employees "to provide a better interchange between management and staff. The potential for the land here has been recognized," he says, "and my greatest pleasure has been watching the land turn into an Arboretum."

Arboretum volunteers or members wishing to secure a fishing permit should call Mrs. Julie Morgan (914) 677-5343 before March 25.

# Around the Arboretum

## New Grant for Woodlot Program

A grant of funds to train youths to manage a forest for firewood has recently been approved by the Private Industries Council of Dutchess County.

The funding, in the amount of \$32,000, will be provided through the C.E.T.A. (Comprehensive Employment Training Act) Program during two four-month periods in which groups of six youths will be trained in forest management practices and employed by the New York Botanical Garden Cary Arboretum.

The youths, who range in age from 18 to 21, receive classroom instruction and outdoor training in tree identification, equipment maintenance, cutting methods, first aid, woodlot business management, and cordage estimation. Most participants in the program were previously unemployable because of undeveloped work habits and lack of schooling.

"We are training these young people to handle full-time jobs and to learn a skilled occupation," reports Dr. Peter Dykeman, Coordinator of Education at the Cary Arboretum. The students are enthusiastic about the training and most will go on to other jobs when they finish this program.

The grant begins phase two of a program which started last July and ended in January. In the first phase, 13 people were trained over an eight-month period. Training included 110 hours of classroom instruction. More than 140 cords of wood, all used to heat buildings on the Arboretum grounds, were collected from an Arboretum woodlot. Two participants in that program have gone on to other forest-related work, and others have found jobs in other areas of work.

"The difference between the two programs is minimal," says Clarence Russell, supervisor for the training program. "But we learned from the first program that training small groups of people for short amounts of time will be more practical, and will also help place newly-trained youths in the job market

after four months of training instead of eight."

The Cary Arboretum has provided an indoor and outdoor classroom environment for C.E.T.A. and Y.C.C. (Youth Conservation Corps) participants, as well as training for youths enrolled in the S.Y.E.P. (Summer Youth Employment Program) and S.P.E.D.Y. (Summer Program for the Employment of Disadvantaged Youth).

## Antique Fair to Benefit Garden

The lawn of the Gifford House Education and Visitor Center, Sharon Turnpike (Route 44A), will be the setting for the second annual Antiques Fair scheduled for June 13. A rain date is set for June 14.

Sponsored by the Nine Partners Garden Club of Millbrook, the fair is a fund-raising event to benefit the Gifford Garden, a perennial display and teaching facility currently under construction on the Gifford House grounds.

The event has attracted antiques dealers from areas throughout New York, Connecticut and Massachusetts. Plenty of parking and refreshments will be available. Applications for dealers and additional information may be obtained from The Antiques Fair Committee, c/o The Cary Arboretum, Box AB, Millbrook, New York 12545.

## Cartier to Exhibit Work

Mr. Jean Cartier, renowned for his photographic documentation of trees, will exhibit a group of fifty prints beginning April 26 in the Arboretum's solar-heated Plant Science Building. Mr. Cartier has taught and exhibited widely, and has work in the permanent collection of the Metropolitan Museum of Art in New York City.

The photographs, which will be on display through June 21, can be viewed weekdays, 9 a.m. to 4 p.m. and Sundays, 1:30 to 3:30 p.m.

## L. Lee Stanton Dies

The staffs of both the New York Botanical Garden and the Cary Arboretum were saddened by the death of Mr. Louis Lee Stanton, husband of Helen La Fétra Stanton, on February 9. Mrs. Stanton is a Trustee of the Mary Flagler Cary Charitable Trust.

## PLANT CARE HOT LINE (914) 677-5358

Questions on houseplant care or problems can be answered  
*Mondays and Fridays*  
from 1:30 - 3:30 p.m.  
by Sandy Reilly

## At the Garden

A two-act flower show welcomes spring at the New York Botanical Garden's Enid A. Haupt Conservatory in the Bronx this year, to the delight of both southern and northern gardeners.

Act I of the show, on stage in the conservatory through March 29, is entitled "Springtime in the South." The show will feature the Garden's collection of potted and tubbed camellias; daffodils in shades of yellow, white and gold; crocuses; tulips; azaleas; and other harbingers of spring. The colorful combinations of blooming camellias and daffodils are familiar for Dixieland gardeners, but an unexpected pleasure for northerners.

Act II, "Spring Azalea Show," will open April 7, and will feature the Garden's collection of indoor azaleas in many variations of red, pink, fuchsia and lavender flowers of late spring. Other seasonal flowers will include pansies, tulips, anemones, ranunculus, freesias and irises. Easter weekend will bring pure-white lilies onto the scene.

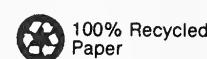
"Friends of the Arboretum" are admitted free to the Enid A. Haupt Conservatory. Since spring always comes a little earlier to the Bronx than to the mid-Hudson region, plan to tour the grounds as well as the Conservatory, and lunch at the Garden's Snuff Mill Restaurant.

For more information on activities at the Garden, please contact Robin Parow-Place (914) 677-5343.

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**THE CARY ARBORETUM  
of  
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